

**CLAIMS**

1. Ventilation system for exchanging the air in a room with outside air, which system comprises:

- a fine-wire heat exchanger having a first channel and a second channel, which channels are in heat exchanging contact with each other, and wherein the first channel has an inlet connected to outside air and an outlet connected to the air in the room, and wherein the second channel has an inlet connected to the air in the room and an outlet connected to the outside air;
- balancing means for balancing the flow in both channels, such that the heat transfer is maximized.

2. Ventilation system according to claim 1, wherein the balancing means comprise:

- a ventilator arranged in the first channel;
- a ventilator arranged in the second channel;
- at least four temperature sensors arranged in the outlets and inlets of the first and second channel; and
- a controller for comparing the readings of the temperature sensors and for controlling the ventilators in the first and second channel, such that the temperature difference between the inlet and outlet of the first channel corresponds to the temperature difference between the inlet and outlet of the second channel.

3. Ventilation system according to claim 1, wherein the balancing means comprise:

- a first double acting cylinder, wherein the piston defines a first chamber and a second chamber;

- a second double acting cylinder, wherein the piston defines a third chamber and a fourth chamber, wherein the piston of the first cylinder is connected to the piston of the second cylinder, such that when the first chamber is enlarged by displacement of the pistons, the third chamber is also enlarged;

- a balancing means outlet and an balancing means inlet; and

- control means for alternately connecting the balancing means outlet with either the first chamber or the fourth chamber, the balancing means inlet with either the second chamber or the third chamber, the first channel with either the fourth chamber or the first chamber, and the second channel with either the third chamber or the second chamber.

4. Ventilation system according to claim 3, wherein the balancing means comprise at least one ventilator arranged in the balancing means inlet, balancing means outlet, the first channel or the second channel.

5. Ventilation system according to claim 3 or 4, comprising driving means, such as a linear motor, for driving the piston.

6. Ventilation system according to any of the preceeding claims, wherein the main dimensions of the heat exchanger are adapted to the main inside dimensions of a dishwasher.

7. Ventilation system according to claim 6, wherein the main dimensions of the heat exchanger are smaller than 0,55m.

8. Combination of a facade, a room on the inside of and adjacent to the facade and a ventilation system according to any of the preceding claims, wherein the inlet of the first channel of the system is connected to outside air on

the outside of the facade and the outlet is connected to the air in the room, and wherein the inlet of the second channel is connected to the air in the room and the outlet is connected to the outside air.

- 5           9. Combination according to claim 8, wherein the ventilation system is arranged substantially in the facade.